STATE REVOLVING FUND LOAN PROGRAM

Green Project –Business Model

City of McMinnville – CG3 2015-353

As submitted in the Request for Priority List Ranking (PRL), the proposed project is to upgrade, replace, and rehabilitate the existing 4MGD Waste Water Treatment Plant. The proposed Green portions are projected to be approx. $500,000 in improvements to effect Energy Efficiency for proposed upgrades/replacement to higher efficiency motor(s), variable frequency drive(s) (VFDs), HVAC, and Building Upgrades thru roofing and Insulation. Further, $500,000 in Green innovative components to initiate the ability of providing water reuse to the Community for Irrigation purposes of the treated plant water are proposed.

BENEFIT: Existing Energy Consumption vs Proposed Replacement Components

Influent Screw Pumps and troughs: Currently (4) dual section screw pumps with (4) four 15hp and (4) 10hp pumps, with 8MGD design hydraulic capacity. Wear in screw shafts and troughs, permit an approximate 7 MGD peak currently and an average 20% re-pump due to backflow from trough/screw shaft clearance/wear. The proposed construction is to replace the entire pump station with non-clog, higher efficiency pump, eliminate back-flow, re-pump and reduced capacity. The estimated Energy savings is 20% for the Influent pump station.

Ditch Aeration & Mixing: Currently (6) six paddle wheel aerators serve to drive the mixing and aeration that consists of (2) 40hp and (4) 30 hp motors. There are no speed controls, and reoccurring maintenance on discs, bearings, and shafts necessitate replacement. In replacement, the proposed is to replace with Variable speed mixers, and blowers to yield greater O2 transfer efficiency, less hp for treatment, and greater treatment flexibility for treatment of potential future nutrient limits. The estimated Energy Savings is 15% for the Aeration & Mixing.

Building Roof Insulation & HVAC: The current office/lab building is in need of upgrade and as such, new roofing, insulation, and HVAC are proposed. The estimated overall Energy Savings is 10% reduction in heat loading for the Office Bldg/Lab.

Green Innovative / Re-use: The WWTP currently utilizes plant water for various washing and on-site purposes as well as in the Lime Stabilization/Class A Sludge Treatment facility. However, the proposed projects to expand the re-use capacity from on-site to provide off-site reuse access for irrigation in the Community within the nearby area.

COST ANALYSIS:

As the proposed components for upgrade are necessary for replacement, the Cost vs Benefit analysis is simply based upon the cost increase/difference from direct replacement versus the upgrade to higher efficient counterparts and the anticipated Energy Savings. Based on the existing WWTP Average Daily Flows (1.4-1.8 MGD) and current FY 2013 Utilities ($199,967), the proposed Savings would yield approximately $20,000/Year or $400,000 over 20 years. This is based on approximately 16,700 kWh savings/reduction per month @ $0.10/kWh.

Based on the estimated Debt service for the project the estimated Cost Benefit would yield approximately 10% savings to the total project over the 20 year period.